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Tydes there, according to the directions formerly given in the *Transactions*. At present he assureth from many former Observations, that the biggest *Spring-Tydes*, and *Annual Tydes* there, are about the *Aequinoxes*, according as the Moon is neer the Full, or Change, before or after that time. Of this you may expect a more perfect account hereafter.

*An Extract.*

*Of a Letter concerning an Optical Experiment, conducive to a decayed Sight, communicated by a Worthy person, who found the benefit of it himself.*

I Am to acquaint you of an Experiment, if it may deserve that name, and not rather that of a Trifle; the matter of which is known to many, but un-applied (for ought I know) to such use as it affords. And the use is to my self of greater value, than you'll easily imagine, and I think, it may be equally profitable to many. Thus it is: you know, I have mourn'd for the loss of my eyes. I confess my unmanliness, that I have shed many tears in my study for want of them; but that was quite out of the way of recovering them. I know not, whether by standing much before a blazing Fire, or by writing often right before a bright Window, or what else might be the cause of this decay of my sight, who am not above 60 years of age. But I seem'd alwayes to have a kind of thick smoak or mist about me, and some little black balls to dance in the air about my eyes, and to be in the case, as If I came into a room suddenly from a long walk in a great Snow. But so it was, I could not distinguish the Faces of my acquaintance, nor Men from Women in rooms that wanted no light. I could not read the great and black English Print in the Church-Bibles, nor keep the plain and trodden paths in Fields or Pastures, except I was led or guided. I received no benefit by any *Glasses*, but was in the case of those, whose decay by Age is greater than can be helped by *Spectacles*. The *fairest* Prints seemed through Spectacles like *blind* Prints, little black remaining.

Being in this sad plight, what trifle can you think hath brought me help, which I value more than a great Sum of Gold? Truly,

no other than this. I took Spectacles that had the largest Circles ; close to the semi-circles, on the over-part, on both sides, I cut the bone ; then, taking out the Glasses, I put black *Spanish* leather taper-wise into the emptied circles, which widen'd enough (together with the increasing wideness of the Leather,) took in my whole eye at the wider end ; and presently I saw the benefit through the lesser taper-end , by reading the smallest Prints that are, as if they had been a large and fair Character. I caus'd a Glover to sew them with a double-drawn stitch, that they might have an agreeable roundness, and exclude all rayes of light. So I colour'd the Leather with Ink, to take off the glittering. And this was all the trouble I had, besides the practice and patience in using them. Only, finding that the smaller the remote orifice was, the fairer and clearer the smallest Prints appear'd ; and the wider that orifice was, the larger Object it took in, and so required the less motion of my hand and head in reading ; I did therefore cut one of these Tapers a little wider and shorter than the other ; and this wider I use for ordinary Prints, and the longer and smaller for smallest Prints : These without any trouble, as oft as I see need, or find ease in the change, I alter. I can only put the very end of my little finger into the orifice of the lesser, but the same finger somewhat deeper, yet not quite up to the first joyn't, I can insert into the orifice of the wider. Sometimes I use one eye, sometimes another, for ease by the change ; for you must expect that the visual rayes of both eyes will not meet for mutual assistance in reading, when they are thus far divided by Tubes of that length.

The lighter the stuff is, the less it will cumber. Remember alwayes to black the inside with some black that hath no lustre or glittering. And you should have the Tubes so moveable, that you may draw them longer or shorter, allowing also (as was newly intimated) the orrifice wider or narrower, as is found more helpful to them, that have need of them. To me it was not necessary, but I conceive it convenient, that Velvet or some gentle Leather should be fastned to the Tabulous part next the eyes, to shadow them from all the encompassing light.

I have already told you, that I found no benefit at all by any kind of Spectacle-glasses ; but I have not tryed, what Glasses will  
doe,

doe, if fetled in these Tubes ; having no need of them, I rest as I am. Now I should be heartily glad, if any of my friends should receive any aid or ease by such an obvious device (containing nothing but emptiness and darkness) as this is. And probably they may be more proper for some that are *squint-eyed*, whose eyes doe interfere, and so make the object, as if you would write one line upon another, where, though both should be ever so fairly written, yet neither will be easily legible. Here *Squint-eyes* will be kept in peace, and at fair Law. Certainly it will ease them, that cannot well bear the light ; and perchance it will preserve the sight for longer durance. If *N. N.* should find the benefit, as I do, he may thank you for the information, &c.

*An Extract*

*Of another Letter from the same hand, confirming the contents of the former ; and adding some other Observations about Sight.*

**T**Here is more worth in that slight notice, which I sent you last, than any one, that hath not the defect, which I have, will easily imagine. And perhaps no man will have the patience to endure to use it, but he, that is in a like case of necessity and distress as I am. I praise God for it, I see now by this trifle (these *Taper-tubes*) as well as the youngest in my Family, and can read through them the smallest and blindest Prints, as ever I could from my childhood, though my sight be almost lost. And having used these empty holes for Spectacles little more than a week, I can now use them without trouble all the day long ; and I verily believe, that by this little use of them, my sight already is much amended. For I do now see the Greeness of the Garden, and Pastures in a florid verdure, whereas very lately dark colours, blue, and green, had the same hue to my eye.

If you ask me, how this device came in my head, I shall tell you all I do know. Some years agoe I was framing one of *Hevelius's Polemoscopes* : As I was trying the Tube, without the Dioptrick Glasses, I perceived, that, though the Tube took in very littl, and seem'd scarce serviceable for any considerable purpose ; yet the object appear'd to me more distinct and clear through the Tube, than through the open Air. This I recollected,

and thereupon made the tryal, and found the effect fully to answer to my case, and to be most proper for Characters, as *there* printed. And then I blam'd not a little my own stupidity, that I did no sooner apply to my self the hint, I might have taken from the Ingenious Dr. *Lowers* Observations concerning a Blemish in horses eyes, printed in *Number 32.* though that be nothing to my case, forasmuch as I see very little, if the Air be gloomy, or the Sky clouded; neither have I any resort of humors or sensible defluxions about my eyes.

And now give me leave to add, that if I had consulted with the learnedst and wisest men living, I make no doubt but I should have been disappointed of all relief; and perhaps I might have lost the *Crepuscular* remains of my Sight by adventurous Essayes upon such a tender Organ. Who knoweth how often the wisest of Mortals are lost, whilst they trample on the remedy, that offers it self at hand? We see how many ingenious and laborious Artists have long labour'd for the Elliptical or Hyperbolical Section of Glasses, hoping thereby to make that brittle body of *Glass* of more worth, than the fairest *Diamonds*; yet if this were obtain'd to perfection, I doubt it would not afford me the kindness and relief, I gain by these empty and dark Tubes. And now I hope, that all who pretend to Vertue and Philosophy, will use such just scales for the virtue of things, as to estimate every thing, how cheap and contemptible soever it may seem to be, according as 'tis beneficial, and as it brings relief and supply to the distressed. Ἡ ἀγιστὴ μὲν ὁδὸς.

I must not let this pass, without inserting here a few Notes, some of which referre to those Observations, you received from Dr. *Lower*, and communicated in the late mentioned *Number (32.)*

1. That Horses of an Iron gray, or Dapple-gray are frequently inclining to loose one or both Eyes, if back'd and hard ridden too soon.

2. That in Man, and Beast (in Horses at least) the right eye is the weakest, and most frequently failing.

3. That the pupil or black of the eye is wider and larger in those that are short-sighted, than in those that see at greater distance.

4. I have often noted some that are *short-sighted*, I say not *pore-blind*, to discern all things that are done about them, almost quite behind them, more perfectly then the best-sighted, if the room was not too large for the reach of their sight.

5. Also some of Dr. *Lowers* Observations I could confirme by my own experience. In my youngest days I had a very narrow escape from an excellent Horse, which had that only defect, which they call *Moon-blind* (and they told me of it after the mischief.) I purpos'd to leap a Ditch, but the Horse saw no Ditch, so we fell in together. As Coach-and Cart-horses have flaps on the Ear-sides of their eyes, so these flaps may be fitted (and in some shew of ornament) to shadow the over-part of the eyes, and yet to afford them light enough to see their way. I know not, whether it be usual amongst you; but I have seen a young Child wear a kind of black Riband, like a narrow Masque before her eyes, the Riband or Maske having holes made in fit places to guide the eye. And this was said to be an effectual remedy to cure the Child of *Squinting*, which she had hereditarily from her Mother.

To conclude, for your trial of the *Tubulous Spectacles*; the Tubes may be of paper only colored black, and pasted on, and with the inner folds to be drawn out from one inch to three; some of the folds to be taken out, that the orifice may be wider or narrower, as best fits to every degree of defect.

*Of the Antiquity of the Transfusion of Blood from one Animal to another.*

THere hath been of late some contest about the *Origin* of the *Transfusion*, the *English* first claiming it as a late Invention of theirs; the *French* pretending thereupon, that it had been propos'd among them *ten* years agoe: after which, it was affirm'd upon further investigation, by some ingenious persons in *England*, that *there* it had been known *30* years agoe; whereof the *Publisher* of these *Traacts* hath good proof in his hands. But it seems, that an *Italian* Philosopher, in a certain Tract, entituled, *Relazione dell' Esperience fatte in Inghilterra, Francia & Italia intorno la Transfusione del Sangue*, lately printed in *Rome*, (for the notice whereof.